APPENDIX C

EXTRACT OF STANAG 2926 PROCEDURES FOR THE USE AND HANDLING OF FREIGHT CONTAINERS FOR MILITARY SUPPLIES

This appendix includes an extract of STANAG 2926 (Procedures for the Use and Handling of Freight Containers for Military Supplies). This appendix is implemented by Chapter 6 (Marshaling Yard Operations). STANAG 2926 ensures that national containerization procedures are internationally compatible and interoperable. This STANAG also includes factors relating to container selection, handling, inspection, and stuffing.

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Agreed English/French texts

STANAG 2926
(Edition 1)
NAVY/ARMY/AIR

NATO STANDARDIZATON AGREEMENT
(STANAG)

PROCEDURES FOR THE USE AND HANDLING OF FREIGHT CONTAINERS FOR MILITARY SUPPLIES

Annexes : A. National Standards for Cargo Restraint
B. ISO Standard Freight Container

Related Documents : STANAG 2828 MH - Military Palletes, Packages and Containers
STANAG 2829 MH - Materials Handling Equipment
ISO 830 - Freight Containers - Terminology

AIM

1. The aim of this agreement is to ensure the compatibility and interoperability of national containeration procedures as they apply to military supplies.

AGREEMENT

2. Participating nations agree to adopt the procedures for the containerization of military supplies as stated herein. Provisions of this STANAG will not be construed as authorizing any compromise of safety standards.

DEFINITIONS

3. The following definitions are used for the purpose of this agreement:

a. Stuffing. The placing of cargo and cargo bracing material (dunnage) if required, into the container.

b. Unstuffing (Stripping). The removal of cargo and cargo bracing material (dunnage) from the container.

c. Load Planning. The plan for stuffing and dunnaging cargo in a container to achieve proper distribution of cargo weight and optimum utilization of the container's weight and cube capacity, and to provide the necessary restraint required to protect the cargo and the container.

d. Mechanical Cargo Restraining System. A reusable cargo restraining system installed in containers.

e. Tomming. Restraining cargo from upward movement.

GENERAL

4. This agreement is intended to supplement national policies when necessary to provide for interoperability amongst member nations.

5. Throughout this agreement, dimensions are given in millimetres (mm) and in inches (in) and weights in kilograms (kg) and pounds (lb). These dimensions and weights are considered to be "corresponding values," and not necessarily exactly equivalent.

DETAILS OF THE AGREEMENT

6. Container selection

a. General. The shipper's selection of containers must be based on factors which include, but are not limited to, the following:

(1) Physical characteristics of the cargo.

(2) Compatibility of the cargo.

(3) Destination of the cargo and receiving capabilities at destination.

(4) Optimum utilization of container cubic and weight capacities.

(5) Availability of containers.

b. Type of cargo. The type of containers used by the shipper will be determined by the type of cargo to be shipped, such as ammunition and explosives. Special containers such as open top, ventilated, flat rack, controlled temperature, and bulk liquid containers are available in limited quantities for particular commodities.

c. Cargo volume and density.

(1) In the selection of container sizes, shippers will give prime consideration to the cargo volume and density. The weight and cubic capacity of the container should be utilized to the maximum extent possible with a usage factor of not less than 80 percent weight or cube as a goal.

(2) Shippers will ensure that the gross weight of the tractor, chassis, container, and container cargo does not exceed maximum weight limitations of applicable national highway regulations, unless prior approval/authority is obtained, or does not exceed other weight limitations that may be imposed for safety, operational, or technical reasons. In case of open top or flat rack containers, the shipper shall not normally load cargo so that it extends beyond the confines of a similar closed container, that is an enclosed area 243.8 cm (8 feet) wide, and the height and length of the container. Exceptions may be made if the extending portion of the cargo will be within the clearance limitations of the country through which the container will move and if the cargo protrusion will not interfere with the loading and handling of the container.

7. Container handling

a. Container Movement. Containers are designed to be lifted from the top, using corner fittings and lifting devices designed for this purpose. They should not be lifted with a conventional forklift truck unless they have been provided with fork pockets. Loaded containers should always be lifted by the corner fittings. Failure to comply with this restriction may cause damage to the container and could result in a significant safety hazard.

b. Container Positioning. When the container is removed from the chassis, it should be positioned on a hard, level surface, free of rocks or other debris which might cause damage to the container. The container may be temporarily placed directly on a paved surface during stuffing and unstuffing operations.

c. Container Inspection. Shippers will ensure that containers are inspected and in good repair prior to stuffing operations to ensure cargo security, safety of operation, and to preclude cargo damage from exposure to the elements. Inspection of each container will be performed by competent personnel and as a minimum will ensure that:

(1) Containers are free from cracks, punctures, or holes which could allow sea spray and water to penetrate the containers and damage the cargo, allow pilferage, or allow the introduction of contraband items.

(2) Doors can be sealed properly to prevent entry of moisture and water into the container and may be effectively closed to prevent unauthorized access. The application of seals or locks will be in accordance with national regulations.

(3) Locking devices are intact and in working order; top and bottom rails, floor cross members and corner fittings are not cracked, broken, or deformed; and corner posts are not out of alignment so as to render the container unsafe or incompatible with operating equipment.

(4) Containers are free of infestation and debris.

(5) A Container Safety Convention (CSC) inspection plate is attached and that the effective inspection date has not expired.

(6) Markings required for the identification and tracking of the container are complete and legible.

(7) When applicable, the mechanism for temperature control is in good working order and can be serviced enroute.

8. Container stuffing

a. Types of container stuffing. There are several methods for stuffing containers, depending upon the type of cargo to be transported. For the purpose of this STANAG, two generalized categories are utilized:

(1) Palletized cargo - container stuffing (Preferred method). Shippers will ensure that the cube/weight capacity of the containers is utilized to the maximum extent possible. The total number of standard 1000mm x 1200mm (40- by 48-inch) palletized loads in prescribed height that may be stuffed within a 6m (20 foot) container, for example, is 20, stacked two tiers high. (See Annex B). Various size containers will be stuffed utilizing the same loading pattern, with the quantity limited by the container size.

(2) Unpalletized cargo - container stuffing. A technique in which a container is stuffed with individual items and/or small boxes, and crates until cube/weight capacity of the container is attained. Cargo will be arranged within the container to ensure maximum cube/weight utilization.

b. Preparation for container stuffing. Shippers will undertake the following precautionary/preparatory actions prior to beginning the actual stuffing of containers:

(1) A load plan will be developed, prior to stuffing operations, to achieve maximum cube/weight utilization and to ensure that proper dunnaging (blocking and bracing) is planned for the protection of the cargo, the container, and the loading/unloading personnel.

(2) Cautionary action will be taken to support the front end of a container on a chassis not connected to a prime mover, with adequate cribbing or stanchions to prevent nosing over during stuffing operations. When the container/chassis combination is not connected to a prime mover, wheels of the chassis must be blocked.

c. Procedures for container stuffing. *Shippers will ensure that the* following procedures, as applicable, are followed when stuffing containers:

(1) Items of cargo stuffed into a container must be compatible. For example, cargoes of food or medical supplies will not be mixed in a container with insecticides, packaged POL products, chemicals and compounds, and/or hazardous materials.

(2) Stuffing of wet and dry cargo in a container will be avoided whenever possible. If wet and dry cargo is stuffed in the same container, the dry cargo will be placed over the wet, with sufficient intermediate dunnage to prevent liquid damage.

(3) Cargo stuffed into a container is to be properly distributed, stowed, and restrained to:

(a) prevent cargo from shifting during transit, and falling out when container doors are open at destination;

(b) prevent load concentrations in excess of the container design;

(c) prevent weight imbalances which are unsafe and which can impair operations and cause overloading of the prime mover axles;

(d) prevent damage to cargo caused by forces encountered in shipping via all modes of international transport; and

(e) prevent injury to personnel and damage to the container and lading.

High density cargo will be placed on the lower tier and low density cargo on the upper tier to provide a low center of gravity for increased container stability during transport and handling. Cargo will be dunnaged (restrained) to protect it against lateral and longitundinal stresses and movement during transit.

(4) Individual items requiring manhandling will normally not exceed 70 kg (154 pounds). All items in excess of 70 kg (154 pounds) will be palletized or skidded to provide forklift access.

(5) Wheel loading for forklift trucks used to stuff and unstuff containers should not exceed 19 kg per square centimetre (270 PSI).

(6) Palletized loads will be stuffed in containers in such a manner as to promote rapid and safe unloading at destination. No cargo or dunnage should bear on container doors. Pallets will not be loaded on their side or in such a manner as to prevent forklift access. Skidded loads will always be stuffed in the container with the skids facing down. Palletized loads will not be forwarded with broken or loose (functionally ineffective) banding. Shipping personnel will ensure that all palletized loads are properly banded, or otherwise restrained, prior to stuffing in containers.

(7) Palletized unit loads of general cargo on standard NATO 1000mm x 1200mm (40- by 48-inch) pallets for container shipments should not exceed the length and width dimensions of the pallet. Underhang on a pallet should also be avoided and is not acceptable for ammunition unit loads.

(8) Cargo will be handled in accordance with special precautionary or handling/storage markings, such as, "FRAGILE", "UP/ARROW", "TOP/ARROW", and "THIS SIDE UP".

(9) Placards and signs necessary for movement of hazardous cargo will be posted on the container exterior in accordance with applicable directives and regulations.

(10) Required documentation for movement in containers should be placed on the inside of the container at the righthand doorway, readily visible, and accessible to unloading personnel.

(11) After a container has had the cargo and dunnaging removed, it should be cleaned inside to remove all foreign substances accumulated during movement and be inspected for serviceability. All mechanical components of self-contained restraint systems should be replaced and locked into place. Doors should be tightly closed and secured to preclude damage before it is again moved.

IMPLEMENTATION OF THE AGREEMENT

9. This STANAG is implemented when the necessary orders/instructions have been issued to ensure compliance with the contents of this STANAG.

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ANNEX A TO
STANAG 2926
(Edition 1)

NATIONAL STANDARDS FOR CARGO RESTRAINT

COUNTRY	AMMUNITION			OTHER			COMMENT
	Vertical	Lateral	Longitudinal	Vertical	Lateral	Longitudinal	
BE	EQUIPMENT IS NOT USED IN THE BE FORCES						
CA	2 G*	1 G	2.5 G	2 G	0.6 G	0.4 G	APPLIES TO RAIL AND ROAD MOVEMENT ONLY
DA							
FR							
GE							
GR							
IT							
LU							
NL							
NO							
PO							
TU							
UK	1.5 G	0.75 G	2.5 G	1.5 G	0.75 G	2.5 G	APPLIES TO RAIL AND ROAD MOVEMENT ONLY
US	2 G*	1 G	2.5 G	2 G*	0.6 G	0.4 G	

G: Gravity. In this application, G is a unit of force equal to the force exerted on the load by gravity. For example, a 2G restraint criteria means that the restraint system must contain a 40,000 pound load when subjected to a force of 80,000 pounds.

*Downward direction only, tomming not required for palletized, skidded, or unitized loads.

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ANNEX A TO
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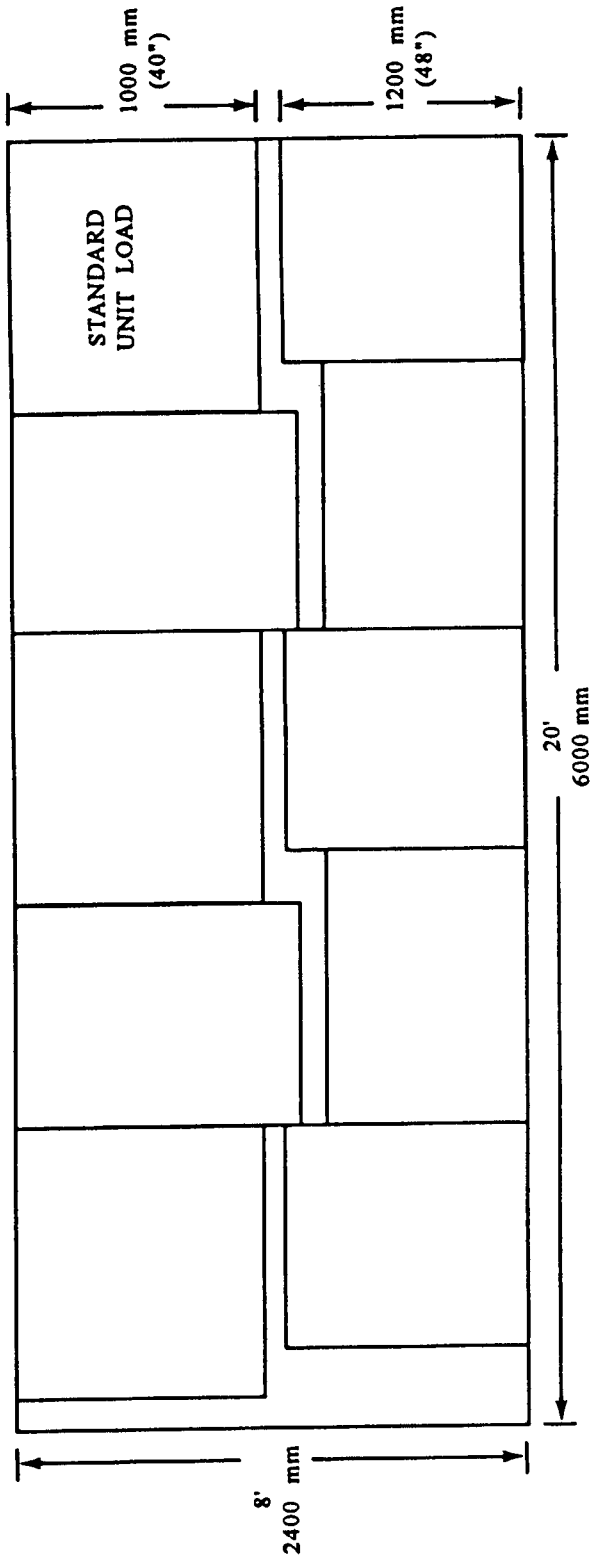
ISO STANDARD FREIGHT CONTAINER



STUFFING PATTERN, STANDARD UNIT LOADS

FIGURE 1

B - 1

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RATIFICATION AND IMPLEMENTATION DETAILS
STADE DE RATIFICATION ET DE MISE EN APPLICATION

NATION	NATIONAL RATIFICATION REFERENCE DE LA RATIFICATION NATIONALE	NATIONAL IMPLEMENTING DOCUMENT NATIONAL DE MISE EN APPLICATION	IMPLEMENTATION/MISE EN APPLICATION					
			FORECAST DATE DATE PREVUE			ACTUAL DATE DATE REELLE		
			NAVY MER	ARMY TERRE	AIR	NAVY MER	ARMY TERRE	AIR
BE	Does not ratify/ Ne ratifie pas							
CA	2441-2926 (DTRP) of/du 27.5.83	CFTOC-01-060-001/ AX/000;C.09-153-001/TS 000;A-LM-186-001/IS-001; A-ALM-158-004/AG-001;B-GL.303-001 FP-0021/ 003/005				.8.87	8.87	8.87
DA	M.204.66/S2926/MAS/ARMY 21226 of /du 19.9.83	HRN 717-1				7.84	7.84	7.84
FR	No. 2026/MMF/BMS of/du 4.9.84							
GE	BMVg-FuS IV 1, Az 03-51-60 of/du 13.2.85	Does not implement/ Ne met pas en application						
GR	069/19/450271/DN 356/HAGS/ DPPD of/du 25.4.84	STANAG 2926						
IT								
LU	Does not ratify/ Ne ratifie pas							
NL	NAS 45.653/43.257/NU of/du 9.5.83	Does not implement/ Ne met pas en application						
NO	MAS/322/83/HST ODRG2/KM/ ABS/STANAG 2926 of/du 14.9.83							
PO	RRN 115/83/DD of/du 29.11.83						2.87	2.87
TU	MAS/TU ARMY/229/83 of/du 11.7.83	Does not implement/ Ne met pas en application						
UK*	D/COSLOG(Sec)22/6/4 of/du 26.5.83	JSP336, Pamphlet 11				2.88	2.88	2.88
US	DRCIP-P of/du 12.4.84	AR 55-1 AR 55-16				2.87	2.87	2.87

*See reservation overleaf/Voir reserves au verso

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RESERVATION

UK: The UK does not regard this STANAG as being applicable to the handling and movement of ammunition and explosives, for which special procedures are required.

RESERVATION

UK: Le Royaume-Uni estime que le present STANAG ne s'applique pas a la manutention et au transport des munitions et explosifs, qui exigent des procedures speciales.